

International Islamic University Chittagong
Department of Electrical and Electronic Engineering

Final Examination Spring-2020		Program: B.Sc. Engg. (EEE)		
Course Code: ME-2301		Course Title: Fundamental of Mechanical Engineering		
Time: 5 hours (Writing 4 hours 30 minutes + 30 minutes submission time)		Full Marks: 50 (Written 30 + Viva/Viva-Quiz-20)		
[Answer each of the questions (1-5) from the followings; Figures in the right margin indicate full marks.]				
SET-A				
1(a).	Why cop of AC is more than refrigerator? Is a higher COP better for conducting refrigerator or AC.	CO1	R,An	03
1(b).	Illustrate the application of thermodynamics.	CO2	U	02
1(c).	Deduce relation between thermodynamic process & cycle.	CO2	An	01
2(a).	Why boiler blow-down is required?	CO2	An	02
2(b).	“Boiler mountings and accessories are prime need for the boiler operation” analyze it.	CO1	An	02
2(c).	Point out the main difference of fire tube and water tube boiler.	CO1	An	02
3(a).	Do you believe nuclear fusion will soon be a reliable power source?	CO2	An	01
3(b).	How to increase the Rankin cycle efficiencies with proper T-S diagram.	CO3	C	03
3(c).	Draw the schematic diagram of Hg-water Binary Vapor cycle.	CO1	Ap	02
4(a).	What is TOR? Draw the block diagram of vapor compression and vapor absorption refrigeration cycle.	CO2	R,Ap	03
4(b).	A refrigeration system has got temperature of 200 ⁰ C and -100 ⁰ C for the compressor and the evaporator sides respectively. Find its COP. If compressor work is 4.5 Kw, find the refrigeration capacity in ton.	CO3	Ap	03
5(a).	How convection process is occurred? How many types of convection process are there?	CO2	An,R	02
5(b).	Consider a person standing in a breezy room at 20 ⁰ C. Determine the total rate of heat transfer from this person if the exposed surface area and the average outer surface temperature of the person are 1.6X m ² and 29 ⁰ C, respectively, and the convection heat transfer coefficient is 6 W/m ² · °C . Convection can be viewed as combined conduction and fluid motion.[X=Last digit of your matric ID]	CO3	Ap	03
5(c).	Can air conditioning facilitates contribute in spreading coronavirus?	CO1	R	01
6.	Viva/Viva-Quiz: The time of viva/viva-quiz will be declared in google classroom.	CO4	R	20